

WHAT IS CLAIMED IS:

1 1. A method of reducing signal processing delay time
2 in a CDMA cellular communications system, the method
3 comprising:
4 processing a data frame according to a first
5 process;
6 simultaneously processing said data frame according
7 to a second process; and
8 combining selected segments of said data frame
9 processed according to said first process with selected
10 segments of said data frame simultaneously processed
11 according to said second process.

1 2. The method according to claim 1, further comprising
2 temporarily storing said combined segments of said data frame
3 in a buffer.

1 3. The method according to claim 1, further comprising
2 de-interleaving and decoding said combined segments of said
3 data frame.

1 4. The method according to claim 1, wherein said
2 combining step includes selecting only segments that were

3 processed not substantially later in time than a completion
4 of said first process.

1 5. The method according to claim 1, wherein said
2 second process uses an interference cancellation algorithm.

1 6. The method according to claim 1, further comprising
2 estimating a spreading factor to be used with said second
3 process.

1 7. The method according to claim 6, further comprising
2 detecting a correct spreading factor for said data frame and
3 comparing said estimated spreading factor with said correct
4 spreading factor.

1 8. The method according to claim 7, wherein said
2 segments that were processed using said estimated spreading
3 factor may be selected only if said estimated spreading
4 factor is substantially the same as said correct spreading
5 factor.

1 9. A signal receiving apparatus for reducing signal
2 processing delay time in a CDMA cellular communications
3 system, comprising:

4 a first processor for processing a data frame;

5 a second processor for simultaneously processing
6 said data frame; and

7 a selector coupled to said first and second
8 processors, said selector adapted to combine selected
9 segments of said data frame processed by said first processor
10 with selected segments of said data frame simultaneously
11 processed by said second processor.

1 10. The apparatus according to claim 9, further
2 comprising a buffer for temporarily storing said combined
3 segments of said data frame.

1 11. The apparatus according to claim 9, further
2 comprising a de-interleaver and a decoder for de-interleaving
3 and decoding, respectively, said combined segments of said
4 data frame.

1 12. The apparatus according to claim 9, wherein said
2 selector is adapted to select only segments that were

3 processed not substantially later in time than a completion
4 of said first process.

1 13. The apparatus according to claim 9, wherein said
2 second processor uses an interference cancellation algorithm.

1 14. The apparatus according to claim 9, further
2 comprising a spreading factor estimator coupled to said
3 second processor for estimating a spreading factor to be used
4 by said second processor.

1 15. The apparatus according to claim 14, further
2 comprising a spreading factor detector for detecting a
3 correct spreading factor of said data frame, wherein said
4 selector is further adapted to compare said estimated
5 spreading factor with said correct spreading factor.

1 16. The apparatus according to claim 15, wherein said
2 segments that were processed using said estimated spreading
3 factor may be selected by said selector only if said
4 estimated spreading factor is substantially the same as said
5 correct spreading factor.